

After the Storm

My love of the Chippewa National Forest originated in times spent in a little cabin in the woods of Pike Bay. There it was I could lie in bed and hear the wind whispering overhead in the tall pines. There is a peace like no other that comes at such times. I believe it leaves fingerprints upon your soul. So it was with great sadness that I greeted the aftermath of the July 2012 storm that swept across the Chippewa, bringing many of these pines and other trees to the ground. When you have grown attached to such things, it is hard to see it change, especially all at once in such a dramatic fashion.

The storm brought this sadness to any number of people. Some saw treasured landscapes altered for their lifetimes. Others suffered considerable economic damage to their homes, properties and businesses. A numbers of folks were frightened, which is often the way when Mother Nature reminds us so plainly that we are not as much in charge of things as we might wish.

And then there is the economic loss of the value of the wood that was growing in these forests. A renewable resource, wood products are central to our lives. I value my beloved pine not just for the sound of it overhead. Back when my father was still making furniture, he made me a couple of beautiful pieces out of pine. My home is graced by the honey hues of the loveliest kitchen cabinets you have ever seen, built by my brother-in-law out of white pine harvested in the Chippewa area. And there really is no other wood that smells so good on a campfire than dry jack pine.

I was contacted this spring by a cabin owner in the Pike Bay area, who suggested it was time to help people understand that change in the woods is not all about loss. I have drug my feet some on that request. Helping people recognize the values associated with dead wood is one of the more challenging tasks I tackle as a Forest Service biologist. When faced with the kind of tangled-up jumble of twisted and broken trees that results from a storm like that of July 2012, what many folks see is a mess that needs cleaning up, fire hazards that need reducing, economic resources that need salvaging, and reforestation efforts that may be plenty complicated and expensive. They tend not to see that some good things can also come of such an event.

But the fact of the matter is that healthy forests don't just contain healthy trees; they also contain dead and dying trees, and downed coarse woody debris. Some experts estimate that 20% of all forest biodiversity is associated with dead wood. In Minnesota, 40 species of birds, 29 mammals, and several reptiles and amphibians require snags and/or cavities for nesting and/or foraging. Up to 40% of bird species in Minnesota forests are cavity nesters.

What are these species? Some examples of wildlife from the Chippewa that use cavities and/or snags include wood ducks, ospreys, sparrow hawks, barred owls, any woodpecker you can think of, tree swallows, chickadees, nuthatches, wrens, weasels, fisher, martin, raccoons, grey fox, squirrels, and multiple species of bats. Logs are used by many species of vertebrates and invertebrates as cover, from black bears to salamanders. These habitat features are also used as foraging sites. In the case of drumming ruffed grouse, downed logs are where a species displays to attract mates.

The wood duck is a good example of cavity-nesting wildlife, because so many people are familiar with this species. These colorful characters live in the Chippewa ponds and larger water bodies, but they may nest more than a mile away from the water. Mature forests are required for the development of trees with suitable cavities for wood ducks, and retaining cavity trees through timber harvest operations is an important way to help ensure continued wood duck nesting opportunities. Wood duck nest box programs are successful at boosting the local population of wood ducks, because natural cavities are often limited in availability.



The osprey is a bird that builds its nest at the top of a large, dead tree (snag). Many people know this ‘fish hawk’ because their prominent nests are often quite visible, and because they make their livings snagging fish from surface waters.

Snags have a limited life-span; they do not last forever, so there needs to be a constant supply. They can take a long time to develop. Consider that large red or white pine snags may be more than 150 years old.

When it comes to snags, bigger is better. Larger snags support more species. Larger bird species need larger snags, but smaller bird species can also use larger trees. For example, a wood duck needs a

snag that is at least 15 to 16 inches diameter at breast height in which to nest, whereas the little yellow-bellied sapsucker can nest in a snag of 9 to 18 inches diameter. The pileated woodpecker, our largest of woodpeckers, uses snags 12 to 22 inches. Woodpeckers excavate cavities that other species may use, as many species require cavities for nesting, yet do not actually do the excavation themselves. Wood ducks sometimes use cavities excavated by the pileated woodpecker.

Bigger is better for snags because the number of species that can use snags increase as diameter and height of the snag increases. Larger snags generally last longer in the environment. Depending on the forest matrix, large diameter snags often occur in low densities, and are irregularly distributed within forest stands and landscapes. When the July 2012 storm broke off all those large red and white pine, it created some premiere snags that can benefit many kinds of wildlife.

After the storm, as the cleanup continues to proceed, the fundamental concept is to retain some forest structure for snag- and cavity-dependent species on sites that are subject to timber harvest. It's also important to retain some of the remaining older live trees as they are the potential to produce such structure over time as the young stand grows and develops. Retaining this structure (snags, logs, large decadent trees) maintains or “lifeboats” biota by conserving this essential habitat following the harvest. This structure enriches the new stand, by allowing organisms to more quickly recolonize harvested sites. This is true whether you are talking about

easily recognized species like woodpeckers and wood ducks, or lesser known organisms such as fungi, soil invertebrates, plants that grow on the forest floor, reptiles, amphibians, and small mammals.

One of the more difficult aspects of snag management to appreciate is that snags in managed forests are a limited resource. Many silviculture treatments tend to remove those trees that are in decline and on their way to becoming snags. We often jump at salvage opportunities when various forest disturbances (wind, ice, insects, fire) create snags. And when a substantial storm event occurs, you don't necessarily have an appreciation for all of the management activities that are planned across a landscape, and what the accumulated effect of yours' and others' efforts will have on the immediate and long-term snag supply in the area.

So, in the midst of "cleaning up" after the storm, why would you leave any of these broken, damaged, or dead trees behind? Because there is a lesser understood story about the gifts such storms bring to us, and their value to not just the recognizable wildlife such as wood ducks and ospreys, but to a whole host of organisms that enrich our forest ecosystems. What is left behind can be as important as what is removed from a site. After all, when we are managing our National Forests, we are not just interested in the trees that our society uses in so many ways, but in the entirety of the ecosystem. So we should try to leave some of those valuable habitat features in place, on behalf of all of the American people to whom this land belongs – the duck hunters, wildlife watchers, campers, loggers, and others, even those who are yet to walk in their woods.

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